

IN THE CLAIMS:

Please cancel claims 1-16 without prejudice or disclaimer, and add new claims 17-32, as shown below in the detailed listing of all claims which are, or were, in the application.

Claims 1-16 (canceled)

17. (New) A bioaffinity assay for quantitative determination in a sample of free PAPP-A, defined as the pregnancy associated plasma protein A (PAPP-A) that is not complexed to the proform of major basic protein (proMBP), wherein free PAPP-A is determined either

i) as a calculated difference between measured total PAPP-A and measured PAPP-A complexed to proMBP, or

ii) by a direct bioaffinity assay measuring only free PAPP-A.

18. (New) The assay according to claim 17, wherein free PAPP-A is determined according to alternative i) and two assays are performed, in which one aliquot of the sample is exposed to a binder which binds total PAPP-A and the binder is detected, and another aliquot of said sample is exposed to a binder which binds only PAPP-A complexed to proMBP and the binder is detected, and the

amount of free PAPP-A is calculated as a difference between determined total PAPP-A and PAPP-A complexed to proMBP.

19. (New) The assay according to claim 18, wherein the assays are non-competitive sandwich assays.

20. (New) The assay according to claim 19, wherein the binders are capture binders.

21. (New) The assay according to claim 19, wherein the binders are labelled binders.

22. (New) The assay according to claim 17, wherein free PAPP-A is determined according to alternative i) as one single dual analyte assay where the sample is exposed to a capture binder, which binds total PAPP-A, and to two detecting binders labelled with different labels, so that the first detecting binder labelled with the first label is directed to an epitope present in any PAPP-A molecule, where the signal of the first label is used to give total PAPP-A, and the second detecting binder labelled with the second label is directed to an epitope in the proMBP subunit of the molecule, where

the signal of the second label is used to give PAPP-A complexed to proMBP.

23. (New) The assay according to claim 17, wherein free PAPP-A is determined according to alternative ii) by exposing the sample to a binder which binds the free PAPP-A but not the PAPP-A complexed to proMBP, and the free PAPP-A bound by said binder is detected.

24. (New) The assay according to claim 17, wherein free PAPP-A is determined according to alternative ii) by making PAPP-A complexed to proMBP non-capable of participating in the bioaffinity reaction in which the sample is exposed to a binder binding total PAPP-A.

25. (New) The assay according to claim 24, wherein PAPP-A complexed to proMBP is blocked or pre-adsorbed.

26. (New) The immunoassay according to claim 18, wherein the binder is an antibody, an antibody fragment or an aptamer.

27. (New) A method for diagnosing an acute coronary syndrome in a person by using as marker either free PAPP-A as such or a ratio

- free PAPP-A/total PAPP-A,
- free PAPP-A/PAPP-A complexed to proMBP, or
- PAPP-A complexed to proMBP/total PAPP-A.

28. (New) The method according to claim 27, wherein free PAPP-A is determined either

i) as a calculated difference between measured total PAPP-A and measured PAPP-A complexed to proMBP, or

ii) by a direct bioaffinity assay measuring only free PAPP-A.

29. (New) The method according to claim 27, wherein total PAPP-A and PAPP-A complexed to proMBP are determined either (i) by two different assays in which one aliquot of the sample is exposed to a binder which binds total PAPP-A and the binder is detected, and another aliquot of said sample is exposed to a binder which binds only PAPP-A complexed to proMBP and the binder is detected, and the amount of free PAPP-A is calculated as a difference between determined total PAPP-A and PAPP-A complexed to proMBP, or (ii) in one single dual analyte assay where the sample is exposed to a capture binder, which binds total PAPP-A, and to two detecting binders labelled with different labels, so that the first detecting

binder labelled with the first label is directed to an epitope present in any PAPP-A molecule, where the signal of the first label is used to give total PAPP-A, and the second detecting binder labelled with the second label is directed to an epitope in the proMBP subunit of the molecule, where the signal of the second label is used to give PAPP-A complexed to proMBP.

30. (New) The method according to claim 27, wherein free PAPP-A is determined by making PAPP-A complexed to proMBP non-capable of participating in the bioaffinity reaction in which the sample is exposed to a binder binding total PAPP-A.

31. (New) A binder which binds free PAPP-A but not PAPP-A complexed to proMBP.

32. (New) The binder according to claim 31 which is an antibody, an antibody fragment or an aptamer.